WHAT IS CLAIMED IS:

1. A lithographic projection apparatus comprising:

a radiation system constructed and arranged to supply a projection beam of radiation;

a support structure constructed and arranged to support a patterning structure, the patterning structure constructed and arranged to pattern the projection beam according to a desired pattern;

a substrate support constructed and arranged to support a substrate;

a projection system constructed and arranged to project the patterned beam onto a target portion of the substrate; and

a gas flushing system comprising radial gas flow outlets, said gas flushing system being constructed and arranged to generate a radial gas flow through said radial gas flow outlets in an intermediate space defined between said gas flushing system and said substrate,

wherein said radial gas flow has a radial velocity directed outwards in said space with a magnitude greater than zero at every location in said space.

2. An apparatus according to claim 1, wherein said gas flushing system further comprises outlet ports and inlet ports that are constructed and arranged to generate a substantially laminar gas flow across at least part of said projection beam between a last lens of the projection system and said substrate.

3. An apparatus according to claim 1, wherein a length of said intermediate space between said radial gas flow outlets and an outer side of said flushing system is at least about 5 mm.

4. An apparatus according to claim 1, wherein said gas flushing system further comprises radial gas flow exhaust inlets, located between said radial gas flow outlets and an outer side of said gas flushing system, said radial gas flow exhaust inlets being constructed and arranged to exhaust part of the radial gas flow.

5. An apparatus according to claim 4, wherein a length of said intermediate space between said radial gas flow outlets and said radial gas flow exhaust inlets is at least about 5 mm.

6. An apparatus according to claim 3, wherein said length is at least about 10 mm.

7. An apparatus according to claim 6, wherein said length is at least about 20 mm.

8. An apparatus according to claim 2, wherein said substantially laminar gas flow, generated between said outlet ports and said inlet ports across at least part of said projection beam between a last lens of the projection system and said substrate,, comprises a flushing gas that is substantially non-absorbent to said radiation of said projection system.

9. An apparatus according to claim 8, wherein said flushing gas comprises one or more gases selected from the group consisting of N_2, He, Ar, Kr, and Ne.

10. An apparatus according to claim 8, wherein said flushing gas in said part of said beam has a contamination of air of less than about 5 ppm.

11. An apparatus according to claim 10, wherein said flushing gas in said part of said beam has a contamination of air of less than about 1 ppm.

12. An apparatus according to claim 11, wherein said flushing gas in said part of said beam path has a contamination of air of less than about 0.1 ppm.

13. An apparatus according to claim 8, wherein said flushing gas has an extinction coefficient less than about 0.005 per cm

14. An apparatus according to claim 13, wherein said flushing gas has an extinction coefficient less than about 0.001 per cm

15. An apparatus according to claim 1, wherein said radial gas flow comprises a gas that has a water contamination of less than about 1 ppm.

16. An apparatus according to claim 15, wherein said radial gas flow comprises a gas that has a water contamination of less than about 0.01 ppm.

17. An apparatus according to claim 16, wherein said radial gas flow comprises a gas that has a water contamination of less than about 0.001 ppm.

18. An apparatus according to claim 2, further comprising a lower lens element formed of a material substantially transparent to said radiation, and a cover member that is substantially planar and provided substantially parallel to the direction of said laminar flow to cover a non-planar surface of a component of said lithographic apparatus in or adjacent to said part of said beam.

19. An apparatus according to claim 18, wherein said material substantially transparent to said radiation is selected from the group consisting of CaF_2, SiO_2, MgF_2 and BaF_2.

20. An apparatus according to claim 1, wherein said radiation of said projection beam has a wavelength less than about 200 nm.

21. An apparatus according to claim 1, wherein said radiation of said projection system has a wavelength selected from the group consisting of: between about 152 nm and about 162 nm and between about 121 nm and about 131 nm.

22. An apparatus according to claim 2, wherein said radial gas flow comprises a gas having a composition different from that of the gas of said laminar gas flow.

23. A method of manufacturing a device comprising:

providing a beam of radiation;

patterning the beam of radiation;

projecting the patterned beam of radiation onto a target portion of a layer of radiation-sensitive material provided on a substrate; and

flowing a radial flushing gas from a radial gas flow outlet toward an outer part of said substrate in an intermediate space between a gas flushing system and said substrate.

24. A method according to claim 23, wherein flowing a radial flushing gas comprises flowing a radial flusing gas with a velocity having a magnitude larger than zero at every location in said space.

25. A method according to claim 23, further comprising flowing a flushing gas in a substantially laminar flow across at least part of said projection beam between a last lens of the projection system and said substrate.

26. A method according to claim 23, further comprising exhausting part of said radial flushing gas through radial gas flow exhaust inlets, said inlets being arranged in said flushing system and in communication with said intermediate space.

27. An apparatus according to claim 1, wherein said substrate support is constructed and arranged to move said substrate with respect to said projection system, and wherein the radial gas flow has a velocity equal to or higher than an instantaneous velocity of the substrate support at least in the direction of movement of the substrate support.

28. A device manufactured according to the method of claim 23.

29. An apparatus according to claim 1, wherein the intermediate space is defined between a lower surface of the gas flushing system and the substrate, said lower surface covering a part of an upper face of said substrate on which a radiation-sensitive material is disposed.

30. An apparatus according to claim 29, wherein said lower surface is substantially parallel to the upper face of said substrate.

31. An apparatus according to claim 1, wherein the gas flushing system further comprises a supply of flushing gas and a gas flow regulator that are in communication with the radial gas flow outlets.

32. A lithographic projection apparatus comprising:

a radiation system constructed and arranged to supply a projection beam of radiation;

a support structure constructed and arranged to support a patterning structure, the patterning structure constructed and arranged to pattern the projection beam according to a desired pattern;

a substrate support constructed and arranged to support a substrate;

a projection system constructed and arranged to project the patterned beam onto a target portion of the substrate; and

a gas flushing system that creates a laminar flow in a first direction across said substrate, and further creates a secondary flow having portions thereof travelling in at least one direction substantially different from said first direction, said secondary flow being generally below said laminar flow.

33. A lithographic projection apparatus comprising:

a radiation system constructed and arranged to supply a projection beam of radiation;

a support structure constructed and arranged to support a patterning structure, the patterning structure constructed and arranged to pattern the projection beam according to a desired pattern;

a substrate support constructed and arranged to support a substrate;

a projection system constructed and arranged to project the patterned beam onto a target portion of the substrate; and

a gas flushing system that includes a first outlet that generates a laminar flow in a first direction, generally parallel to an upper surface of said substrate, and a

second outlet that directs gas in a direction generally perpendicular to said laminar flow, towards said substrate.